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Any Low

511,105

(Oppspec.)

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Ausgabe  
27/10/30

To be done  
Two Phase Baking Process.

Because of regulations existing in many countries prohibiting baking at night, the baked products cannot be delivered in the early morning.

To overcome this difficulty several suggestions have been made. So it has been proposed to arrange separately the doughs prepared in the usual way on the evening before closing time, to put them in practically finished state in the refrigeration room and to bake the goods as soon as the plant is opened. According to a process indicated by the inventor the dough is prepared with the addition of yeast nutrients and also if necessary yeast stimulants, and after the raising put over night in a temperature at which the fermenting is completely interrupted, and the fermentation started again only at the desired time, upon opening the plant, by an increase of the temperature. Furthermore, it was suggested to use in the preparation of the dough with a decreased quantity of yeast, yeast preservatives and fermentation hastening products, and to leave the dough over night in an increasingly elevated moist heat to prolong the fermentation in such a way that upon opening of the plant in the morning the final state of the dough is reached.

Earlier a two phase baking process for baking white bread has been described in patent 175,564, according to which the bread is baked the day before only to the point or slightly further at which it does not collapse when taken out of the oven, and on the day when it is to be used the baking needs only to be completed. But this process does not furnish any satisfactory results, especially in respect to small baked goods because the finished article turns out small and unassuming, and does not

have the loose structure of the normal baked goods.

By the present process the disadvantages of the two phase baking process are eliminated. The new process consists mainly in the fact that during the interval between the two baking processes the pieces not completely baked are placed in a steam atmosphere or in the presence of alcohol vapors or in an atmosphere which contains steam as well as alcohol vapor at a moderate temperature (about 15 to 25 degrees C).

To effect the process one proceeds best as follows: the dough is mixed in the usual manner whereby yeast nutrients or stimulants can be added, then subjected to a slow fermenting in a way also known, after completion of the fermenting process divided and formed.

The pieces are left for after-fermentation and then placed in the oven. As soon as the baked product has risen it is removed from the oven, best still colorless and doughy. The baked product so prepared and still unfinished can be delivered to larger clients in this form, or it remains with the baker. At any rate it is placed into a closed chamber in which one or more receptacles containing water are fixed in appropriate spots on the floor or on the walls. The interior of the chamber is maintained at a temperature of 15 to 25 degrees C. Here the equilibrium, determined by the temperature, between the steam contents of the air and the fluid phase takes place. A temperature of about 20 degrees C has proven best. The steam contents of the air can be regulated by constant temperature according to the specific conditions, like doughiness of the product, constitution of the product, etc., by adding to the water salts in different concentration. It is known that the saturation pressure of solutions according to the substance dissolved and its concentration is smaller to a definite extent than that of

the pure dissolving substance. The usual cooking salt is best used for the regulation of the saturation pressure, so that one places a more or less concentrated cooking salt solution in the closed chamber.

Surprisingly it turned out also that the effect of alcohol vapors does not only influence the appearance and nature of the product favorably, but also causes the weight increase thereof. The effect of the alcohol is still not explained theoretically. It is possible that there is direct action of the alcohol on the gluten; but it is also possible that because of the alcohol an increase in the water absorption is caused. One can expose the unfinished goods to the effect of alcohol vapors, by placing alcohol in concentrated or diluted forms into the chamber instead of water, or also by creating alcohol vapors and steam in the chamber from separated solutions.

The duration of the storage in the chamber is optional. An experimental storing of four to five days, which would hardly take place in reality has shown unchanged good results.

At the time when needed the baked goods are taken from the storage chamber and baked to completion in the oven. The baking time is 7 to 8 minutes. Thus the process makes it possible for the baker to deliver ten minutes after starting the work fresh baked goods, on the other hand it allows the larger clients like coffee shops, restaurants, etc., which buy the unfinished product to prepare fresh baked goods at any time in a few minutes, since the final baking can also be done in small ovens which can easily be installed any place. On Sundays and holidays when fresh baked goods are not at all prepared by the baker, fresh baked goods can thus be prepared according to needs in a few minutes from the unfinished goods delivered the day before.

The finished goods come out of the oven in entirely fresh condition, keep crisp  $2\frac{1}{2}$  to 3 hours and still remain fresh 4 to 5 hours, therefore, get old much less fast than the normal goods prepared by the usual process, which loses its crispness already a half hour after removal from the oven.

In the "Zeitschrift fur Elektrotechnik" 1913, page 663 ff, is a report on experiments to keep finished baked goods as fresh as possible. In these experiments breads which had been completely baked with a full crust in the usual manner, had been placed, so as to retard aging, into a steam atmosphere, in order to avoid a change-over of the water from the crumb part into the crust which has less water. The present invention however refers to a baking process. It pertains to the nature of this process that the baking take place in two phases, and that the first phase be finished before a real crust has formed on the goods. Only the storing, according to this invention, of the unfinished baked goods in the interval between the two phases in a steam atmosphere or in the presence of alcohol, respectively steam and alcohol vapors, makes the two phase process, known of itself, successfully applicable, by bridging the night interval and furnishing in shortest time a baked product which not only equals but even surpasses the products made during the usual baking process as far as quality and lasting properties are concerned.

#### CLAIM.

Two phase baking process in which the pieces formed from the dough are exposed to the oven heat in the first phase only until the baked goods have risen, whereupon the unfinished goods are later baked to completion in a second phase, characterized by the fact that in the interval between the two baking processes the unfinished pieces are stored in a steam atmosphere or in

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the presence of alcohol vapors or in an atmosphere which contains steam as well as alcohol vapors at a moderate temperature (about 15-25° C).

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